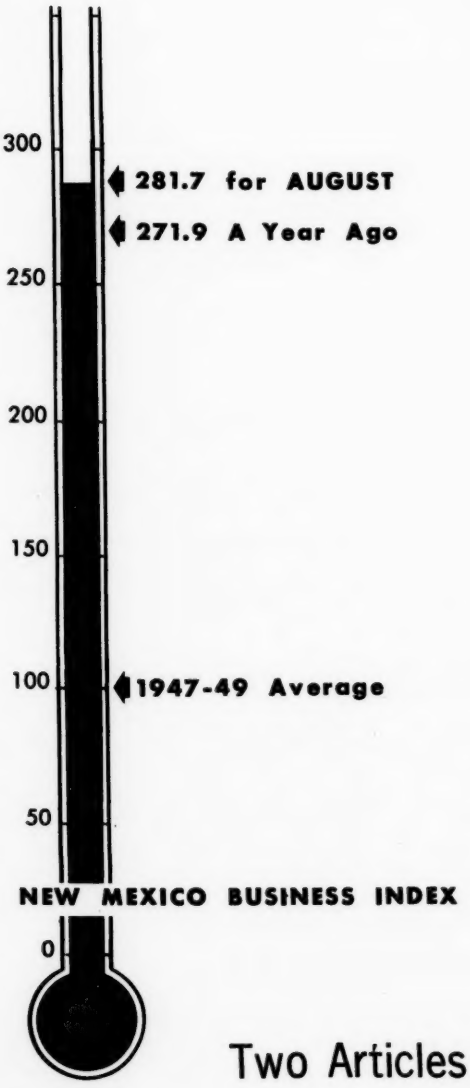
OCTOBER 1959

New Mexico BUSINESS



A seasonal decline in August dropped the Bureau's Index of Business Activity in New Mexico some 5 per cent below July's level; nevertheless, it was riding high at 182 per cent above the 1947-49 average. The decline showed up in a sharp increase in unemployment, minor drops in bank debits, electric power production, and number of wage workers, and sharp cutbacks in construction contracts awarded and metallics production.

Although a slight business sag is typical of August, this year's drop was somewhat larger than usual because of marked declines in construction and metallics mining.

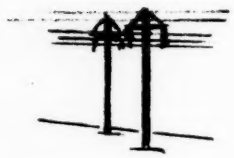
The drop in value of construction awards occurred primarily in the nonresidential and heavy engineering classifications; residential awards were only slightly under year-earlier awards and were almost double the 1957 monthly average.

The decrease in metallics production occurred entirely in copper--the direct result of the industry-wide strike, which began in August.

(Continued on Page 21)

Two Articles on Electric Utilities in New Mexico

The Electric Power Industry in New Mexico



Arthur A. Blumenfeld

General Characteristics

Probably the most significant accomplishment of the electric power industry since its establishment in the United States in 1882 and in New Mexico in 1891 has been its universal availability. In about 77 years electric energy has become one of the most ordinary items in our society. In fact, the acceptance and use of electricity are so great that the present generation would find it hard to imagine a world without such energy, or--more precisely--a world without the conveniences of electrically activated devices. Our society has grown so completely dependent upon this source of energy that an electric power failure paralyzes a community and can constitute a major calamity. So great is our acceptance of electricity, so strong is our faith that the bulb will glow when the switch is "turned on" that we forget that electricity is a manufactured product not much different from a host of other such products. This article is concerned with some of the important characteristics and the development of the industry responsible for manufacturing electric energy in New Mexico.

Although as early as 1875 electricity was used on a semi-experimental basis, it was first commercially generated in the United States in New York City during 1882. Electricity was first made commercially available in New Mexico in Santa Fe in 1891. The first such power produced in this state came from a hand-model generator much smaller than a desk top and was used to light the Santa Fe Plaza.

The manufacture of electricity developed into an industry in this state--as elsewhere--slowly but steadily, as small power plants were established to serve individual communities. Although the original plants were, of course, quite small in comparison with their modern counterparts, the communities which first availed themselves of the new kind of energy were the largest in the State--Santa Fe, Las Vegas, and Albuquerque.

Probably, no segment of the economy has recorded so rapid and steady a growth as has the electric power industry, whether the examination be on a national or state level. It is almost impossible to find any measures of activity in the electric field that have not shown constant growth and yearly increase. The use of electricity has grown essentially in response to two different stimuli, the first being an expanding population which has demanded electricity for conventional purposes, the second, and possibly more important, being increasing new uses of electricity in home and in factory.

The power industry has grown much faster in New Mexico than nationally, although gains in the electric power field nationally are considered to have been phenomenal. Table 1 illustrates the comparative rates of growth of electric power production in the United States and in New Mexico. Although the U. S. index of such production in 1958 stood 133 per cent above that of the base period, the New Mexico increase was 215 per cent for the same period.

Table 2 compares the development of the New Mexico electric industry with the overall business activity in the State and with activity in five specific economic areas. Electric power production increased 257 per cent between 1947 and 1958, while in approximately the same period the average of all business activity increased 188 per cent. Electric power production grew faster than all of the other economic measures shown in Table 2. During the same period, the population of the State expanded only 62 per cent.

INDUSTRY CHARACTERISTICS

Utility and Industrial Electric Power

Before considering in detail the history of the development of the electric power industry in New Mexico, certain industry characteristics

TABLE 1

INDEXES OF ELECTRIC POWER PRODUCTION BY UTILITIES
United States and New Mexico, 1930-1958
(1947-49 = 100)

Years	United States	New Mexico
1930	33.3	9.1
1935	34.5	22.8
1940	51.3	37.8
1945	80.5	66.6
1950	119.0	120.9
1952	144.4	160.9
1954	170.6	191.8
1956	217.2	244.3
1957	228.3	276.5
1958	233.2	314.8
Per Cent Change:		
1930-1940	54.1	315.4
1940-1950	132.0	219.8
1950-1958	96.0	160.4

Source: Bureau of Business Research, University of New Mexico, based upon reports of the Federal Power Commission.

need to be understood. Basically, the industry is divided into two major segments: industrial power and utility power (see Figure I). The term "industrial power" is used to designate electric energy produced by business firms for their own use. Such organizations are generally mining and manufacturing firms, but the term is used broadly to cover electricity produced by all business firms. Electric power production in such cases is secondary to the principal activities of the firm.

"Utility power" is generated for sale, and its generation and sale constitute the primary business of the electric utility. It is the electric utility that is of most interest to the general public and to the majority of business firms. With almost no exception, power for domestic purposes (residential power) is purchased from a utility; and the great proportion of business power, including that used by many industrial firms, also comes from the same source. Eighty-nine per cent of all electricity produced and a like amount of all generating capacity existing in this country are owned by the utilities. The situation in New Mexico is similar, with utilities owning 93 per cent of generating capacity and producing 90 per cent of total energy.

Within New Mexico's industrial power sector there is only one pattern of production and distribution: the power-producer is also the consumer of its own production. The utility portion of the industry, however, can be divided into three functional segments (see Figure I), with most utilities operating on all three levels: the fully integrated electric utility generates power, sells some of the power at wholesale--but sells the major volume of its production at retail--and may also transmit power for other utilities. Not all utilities have generating facilities, but all utilities do sell energy at retail. Non-producers purchase power at wholesale from the utilities that both generate and sell.

Private-Public Ownership

In addition to the functional division of the power industry, its patterns of ownership--varying in design--are also important. In the utility field there are several kinds of ownership, which are partly explained by Figure I. The major divisions are three--those that are privately owned, those that are cooperatively owned, and those that are government owned. The private utility is predominantly a private corporation with ownership divided among stockholders. In the

TABLE 2

INDEXES OF ECONOMIC ACTIVITY
New Mexico, 1946-1958

Years	Electric Power Production	Business Activity	Total Employment	Retail Trade	Petroleum Production	Farm Marketings
1946	78.0	90.3[a]	92.6[a]	na	80.8	77.4
1950	118.0	120.5	120.5	106.1[b]	104.1	114.2
1952	154.2	161.0	161.0	137.4	129.9	115.2
1954	175.2	166.1	166.1	142.4	163.7	99.5
1956	220.9	204.8	204.8	189.5	191.7	109.4
1957	246.0	233.8	233.8	207.9	204.0	102.2
1958	278.2	259.9	259.9	215.3	212.5	121.8
Per Cent Change						
1946-1958	256.7	187.8[c]	180.7[c]	--	162.7	57.4
1950-1958	135.8	115.7	115.7	102.9[d]	104.1	6.7

[a] 1947
[b] 1949
[c] 1947-58
[d] 1949-58
na - not available
Source: Bureau of Business Research, University of New Mexico

case of very small utilities ownership and control may be in the hands of individual proprietors or of partners.

Cooperatives are fairly commonly, but often mistakenly, included in the minds of many people with government-owned utilities. Such is not the case. Cooperatives are locally organized and locally managed. However, primary financing is handled by and some financial supervision is exercised over the cooperatives by the Rural Electrification Administration of the U. S. Department of Agriculture. The co-ops are completely independent in setting their own day-to-day operating policies and are directly controlled only by their own members, who must be users of cooperative electric power. To put it briefly, the cooperatives are "privately owned, locally controlled, business managed, and tax paying."

Government-owned electric utilities in this state fall into two distinct categories: federal and municipal, each operated by authority of one of those levels of government. So much, then, for the distinctions among the segments of the electric power industry.

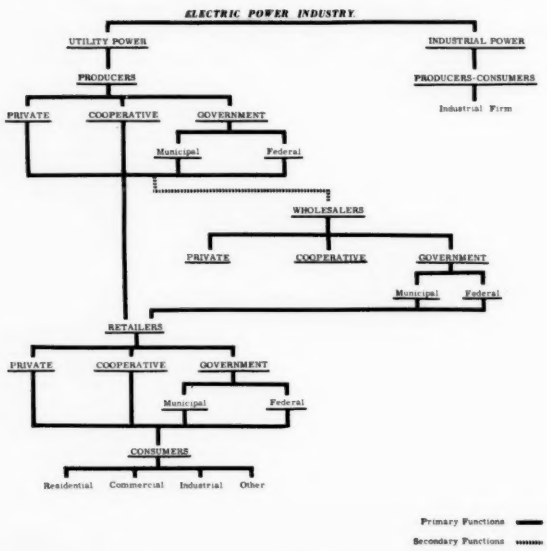
EARLY DEVELOPMENT

Initial Period: 1902-1927

From the first, electric power was in great demand in New Mexico. By 1902, only 12 years after its introduction here, the industry was firmly established. Table 3 traces that early development, showing the increase in the scale of operations. Although all measures of activity indicated extremely rapid growth, plant expansion and increases in productive capacity led the way. The value of physical plants bounded upward tenfold during the 1902-1912 period. The 13.6-per cent annual rate of growth for the initial 25-year period is so remarkable that if continued it would have resulted in the industry's doubling its capacity and physical equipment approximately every five years. The speedy expansion of facilities was quite natural, of course, for new plants were constructed in many communities, and established plants were expanded to bring power to additional customers and additional power to old customers. During this 25-year span, power usage per customer increased by about 55 per cent.

Figure 1

FUNCTION AND OWNERSHIP PATTERNS OF THE ELECTRIC POWER INDUSTRY



Of considerable significance was the tripling in number of plants from 1902 to 1922, followed by a sharp reduction in number of firms during the next five years. In most cases the new plants were small, isolated from other plants, and capable of serving only the population in their immediate vicinities.

Although the number of firms was reduced almost 40 per cent between 1922 and 1927, increases in other measures of operations during the same five years should be fully noted; for example, capacity rose by 50 per cent, production by 46 per cent, and the number of customers by 44 per cent. The decline in the number of firms was caused principally by consolidation of various small firms into larger ones, which continued to take over smaller companies and, presumably, to organize them into more efficient operating units. Technological innovations played an important role in this change. The introduction of the alternating current made possible high-voltage transmission and low-voltage distribution. The distance over which power could be transmitted economically was increased so that the power station could be located a considerable distance from the farthest point of consumption.

The reduction in the number of electricity-producing firms in New Mexico corresponded closely to the national situation. Between 1922 and 1927, power plants throughout the nation declined 32 per cent in number, a decrease caused principally, as was true in New Mexico, by the consolidation of producing and distributing firms. Interestingly enough, this trend toward consolidation is still very strong. In 1945 the nation's 3,886 power plants were owned by 1,594 electric power systems. By 1957 the 3,534 generating plants used by electric utility systems were owned by 1,283 establishments. This decrease both in plants and in operating firms occurred during a period when the production of electric power rose from 222.5 billion kilowatt hours annually to 600.6 billion.

TABLE 3

SELECTED STATISTICS
NEW MEXICO ELECTRIC POWER INDUSTRY
1902 - 1927

	1902	1907	1912	1917	1922	1927	Average Annual Percentage Growth 1902 - 1927
Number of Establishments	11	15	21	29	31	19	2.2
Value of Plant (000s)	$ 369.9	989.3	3,133.8	4,292.2	4,789.1	na	13.6[a]
Number of Generators	22	32	50	66	63	na	5.4[a]
Plant Capacity (kw)	986	3,789	7,981	12,713	15,178	24,090	13.6
Production (kwh 000s)	2,637.8	4,614.3	9,027.8	17,244.8	22,362.4	32,674.3	10.6
Number of Customers	na	4,494	8,551	13,988	18,834	27,213	9.4[b]
Gross Revenues (000s)	$ 135.3	292.7	497.9	894.2	1,417.9	1,951.4	11.3
Employees	45	83	158	256	266	na	9.3[a]
New Mexico Population (000s)	217.5	283.1	338.5	361.2	375.5	410.2	2.6

[a] 1902-1922
[b] 1907-1927
na - not available
Source: U.S. Bureau of the Census

The earliest New Mexico ventures into the field of electricity production were made by private business firms, but by 1912 three municipalities had established their own generating facilities. Presumably, these were communities the private businessman had been too slow reaching. The municipally owned establishments tended to be much smaller than their private counterparts. The municipal plants of 1912 had a total value of $63,000, averaging $21,000 each; on the other hand, the private plants in aggregate were worth $3.1 million, averaging $171,000 each. Of the 8,600 customers receiving electric service in New Mexico that year, approximately 500 were supplied by municipal utilities. These power plants, at the height of their early period, had a total of five systems with an aggregate plant value of $300,000. As part of the consolidation movement of 1922-1927, three municipalities sold out to private companies.

We have no way of knowing what portion of the New Mexico population received electric service during most of this early period. We do, however, have information for 1917, taken from Census of Electric Power Stations of that year, which reported that 22 per cent of all New Mexicans were being served with electric power at that time. This proportion just about equals the proportion then living in cities and town. It is fairly certain that almost every city dweller in the State did his 1917 reading by a tungsten lamp, while his country cousin continued to use candles and kerosene lamps.

Although an impressive fifth of our population had electricity only 25 years after it had been introduced into the State, we must realize that widespread electrification of New Mexico came slowly. In 1917, New Mexico was one of seven states in the nation having more than 70 per cent of their population still without electric power. In the same year 60 per cent of the nation had electric service. Our neighboring states of Arizona, Colorado, and Texas reported in 1917 that the proportion of their populations being served with electricity were 55, 47, and 36 per cent respectively; and four East Coast states reported that 90 per cent of their population used electricity. The rapid electrification of the nation as a whole ranks among the most significant events of the century. The slow rate of such progress in this state can be attributed to the high cost of bringing power to small populations living in scattered and often inaccessible locations.

Intermediate Period: 1930-1945

The ground work for the modern electric utility was laid during the late 1920s. Consolidation had provided the large corporate organizations with the resources to utilize improved technology for the production and, distribution of electric power to expanding markets--and to do so efficiently and economically.

The 1930-1945 period brought many changes and much growth. Generating capacity expanded five times; production increased 10 times (Table 4). Electricity became available to larger and larger portions of the population and was used increasingly wherever it was available. This development followed various patterns. The basic, long-term trend within the industry, growth of the large firm, continued. But in contrary fashion, because of the relatively sparse nature of New Mexico's population, small light-and-power companies--as in the early days--were established to serve particular communities; and certain private individuals set up generating facilities to provide power for their homes and businesses--farms and ranches. By 1940 approximately 30 private utilities and a large number of individual plants were operating. In addition, there were five municipal and three cooperative electric systems. The overwhelming majority of all these various systems were exceedingly small operations: nine

had assets of less than $50,000; only one firm sold more than a million dollars worth of electric energy. Such plants were costly to operate, and the cost of electric power was, of course, fairly high. In fact, as late as 1940 one utility was still using some wood to heat its boilers.

The nature of the ownership of the private utilities operating in New Mexico during the 1930s and early 1940s is interesting to consider. All but six of the smallest were caught up in the trend toward control by giant, nationally active utility holding companies. The holding company device was extensively employed in the electric industry. Scandalous activities of these holding companies on a national scale, activities clearly against the public interest, aroused Congress and led to the passage of the Public Utility Holding Company Act of 1935, which required holding companies to divest themselves of interest in the large number of operating utilities under their control. However, immediate dissolution of such empires was retarded by World War II, but was completed to a large extent by the end of the 1940s.

In New Mexico the breaking up of the holding companies played an important role in the continued consolidation of the utilities. The holding company method was to maintain the identity of its subsidiary utilities. In New Mexico one such company controlled five or six electric producers, but maintained their operations as separate entities. When forcibly cut loose from their giant parent, the small companies often came together and merged into new organizations. The Public Service Company of New Mexico, for example, was the result of the merger in 1947 of four utilities that had previously been controlled by one or another of the holding companies. Several cooperative and municipal systems were organized at this time and took over the facilities of former holding company subsidiaries.

Of primary national importance was the establishment during the 1930-1945 period of the Rural Electrification Administration to facilitate rural electrification. This agency, created by executive order of the President in 1935 and approved by Congress the following year, was an attempt to solve two problems: the need for increased economic activity to combat the Great Depression and the demand of farm groups for government assistance in providing electric power to rural areas. At the time, only about 25 per cent of all farms had electric service, but over 75 per cent of our nonfarm population had access to it. Rural electrification was badly needed in this state, where only approximately 10 per cent of the farms were then electrified. The great spaces between farms and ranches and the rugged terrain acted as strong deterrents to electrification by private utilities.

A third important development in the field of the electric utility in New Mexico during this period was the completion in 1941 of the Elephant Butte hydroelectric plant on the Rio Grande as part of the Rio Grande Project of the U. S. Bureau of Reclamation. Generating facilities were one part of the project that included irrigation and flood control facilities for the lower Rio Grande Valley in New Mexico and Texas. The Elephant Butte plant added 24,300 kilowatts of generating power to the State's total capacity. Eventually, 495 miles of high-voltage transmission lines stretched from Albuquerque to Las Cruces, with branch lines to Willard, to Deming and Central, to Alamogordo and Hollywood. The Elephant Butte facility has played an important part in providing power to a large section of New Mexico and in insuring the continuous availability of such power.

Current Period: 1945-1959

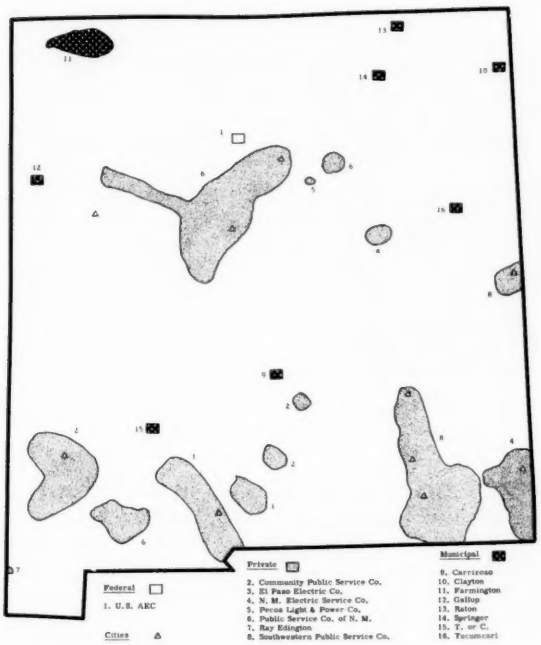
The structure of the electric power industry that emerged at the end of World War II has continued, with few modifications, to the present day. The pattern that followed the dissolution and realignment of the holding company subsidiaries and the emergence of the electric cooperatives is the one in evidence today.

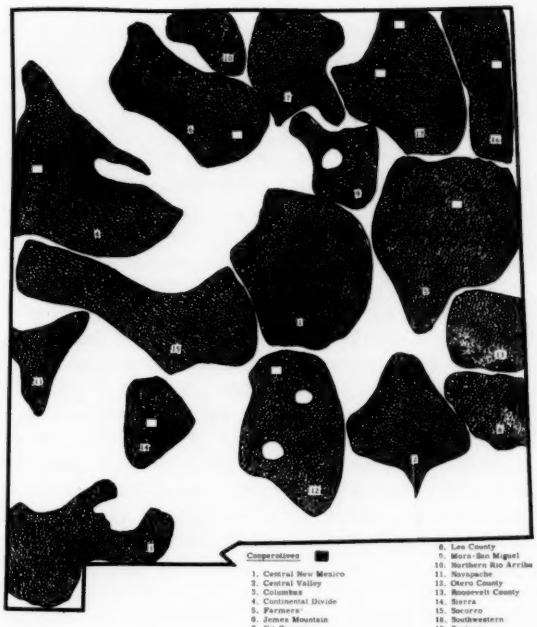
TABLE 4

CAPACITY, PRODUCTION, SALES
OF THE ELECTRIC POWER INDUSTRY
New Mexico, 1902 - 1958

Years	Capacity (kw)	Production (in millions kwh)	Sales* (in millions kwh)
1902	986	2.6	--
1907	3,789	4.6	--
1912	7,981	9.0	--
1917	12,713	17.2	--
1922	15,178	22.4	14.7
1927	24,090	32.7	26.6
1930	43,000	76.0	--
1937	96,000	256.0	--
1942	145,000	410.0	--
1945	214,000	774.0	294.6
1950	342,000	1,296.0	615.7
1952	428,000	1,707.0	--
1954	537,000	1,953.0	993.6
1956	515,000	2,510.0	1,610.0
1957	688,000	2,798.0	1,729.5
1958	858,000	3,142.0	2,076.7
Per Cent Change			
1945-1958	300.9	305.9	604.9
1930-1945	397.7	918.4	--
Average Annual Percentage Growth			
1927-1958	12.22	15.87	15.09
1937-1958	11.00	12.68	--
1945-1958	11.27	11.38	16.21

*To final users
Source: Bureau of Business Research, based on reports of the Federal Power Commission





Market Areas of New Mexico Electric Utilities

(Since Elephant Butte and the Plains Co-op do not sell at retail, they are not shown on the maps.)

The maps identify the areas of individual utility service in New Mexico. As can be readily seen, private companies serve a relatively small geographic area. However, they serve the largest number of customers and sell the largest volume of electricity. Familiarity with the distribution of population in New Mexico will point up the fact that the private companies serve those areas with the heaviest concentrations of population.

Geographically speaking, municipally owned utilities serve a minute portion of the State. Until action by the 1959 State Legislature, a municipal electric system was limited to providing electric service no farther than five miles from the city limits. But the 1959 Legislature extended the area of municipal service to include any adjacent locations not already receiving electricity. Several cities will be able to take advantage of this new provision. It is probable that municipal electric systems will eventually occupy positions of increased importance.

Electric cooperatives bring substance to the claim of universal availability of electricity in New Mexico. Although we do not have complete data concerning the physical extent of the area served by the cooperatives, they obviously provide service over a majority of the State, possibly as much as three quarters of the entire land area. (See maps.)

However, certain sections of the State--in addition to uninhabited mesas and mountain tops--still do not have electricity generally available. If the maps are placed, in imagination, one over the other, a fairly accurate picture can be obtained as to where electricity is and is not available. The major blank spots are the Gila area in southwestern New Mexico, parts along the southern border east of El Paso, areas west of both Socorro and Roswell, and a corridor from the edge of the Albuquerque service area to the edge of the Farmington area. It would seem that these without permanent populations. It is also apparent from the maps that areas served by the cooperatives in some instances overlap areas served by the private utilities. It should also be pointed out in explanation of the New Mexico Public Service territory in the Deming area that service is supplied over lines belonging to the U. S. Bureau of Reclamation.

An important recent innovation for producers, distributors, and consumers of electric power was the establishment of the New Mexico Power Pool. The power pool system, widely used throughout the nation, is a device which achieves integration of the electric-generating facilities of utilities in a particular region. The transmission lines of each utility are connected to

those of other utilities so that in practice each system is connected to every other within the pooling agreement. The system has multiple advantages for each utility and for the customers of utilities belonging to a pool. Basically, the system operates to reduce costs and improve services through more effective utilization of all generating facilities.

As a general rule, each electric utility likes to maintain enough excess reserve generating capacity to insure uninterrupted service if its largest unit should break down. Needed reserves within a pool are figured on a system-wide basis, with reserve requirements equaling the largest generating unit in the pool. In this situation a generator failure of one utility can be compensated for by the reserve capacity of two, three, or more pool members. The result is that unused and very expensive excess generating equipment is held to a minimum. Another advantage of the pool system is the fact that additional generating facilities are built only when a steady, sizeable need has been proved. Short-range, temporary needs can be met by supplementary purchases from other pool members. Also, maintenance programs can be more effectively carried out when other members of a pooling agreement can supply power, and operating costs can be kept down so that rates to customers are lower.

The Thirty-Ninth Power Pool, operating in New Mexico and set up following World War II, has these members: the Rio Grande Project of the Bureau of Reclamation, the Community Public Service Company, the El Paso Electric Company, the Plains Electric Generating and Transmission Cooperative, the Public Service Company of New Mexico, the Socorro Electric Cooperative, and the Truth or Consequences Municipal Electric System. Power Pool resources are widely available in New Mexico's Rio Grande Valley and the northwestern tip of Texas, with a few branches east and west of the river valley. During 1958 almost 100 million kilowatt hours of electricity were handled through this pool's system, primarily over the transmission lines of the Bureau of Reclamation.

Comparisons Within the Industry

The four classes of electric utilities (private, cooperative, municipal, and federal) generate approximately 90 per cent of all electric power produced in the State. Table 6 presents certain statistics on their operations, showing the relative importance of the various classes of utilities. The private companies dominate the industry to the extent of 70 to 80 per cent (depending upon which measure one examines) of total activity. The cooperatives do between 15 and 20 per cent of all utility business (sales, revenues, customers), but produce only about 8 per cent of total power. The municipalities do between 6 and 10 per cent of the business, but produce less than 5 per cent of all power generated. Federally owned utilities account for only about 1 per cent of industry business, but produce 8 per cent of total power.

TABLE 5

UTILITY AND INDUSTRIAL POWER PRODUCTION
New Mexico, 1945-1958
(in millions kwh)

Years	Total Power Production	Utility Production	Industrial Production
1945	774	559	215
1950	1,296	1,061	235
1952	1,707	1,431	276
1954	1,953	1,707	246
1955	2,118	1,866	252
1956	2,510	2,158	352
1957	2,798	2,438	360
1958	3,142	2,837	305

Source: Bureau of Business Research, based upon reports of the Federal Power Commission

A significant difference exists between the figures on amount of business done and those on the volume of power produced by the various classes of utilities. Generating over 80 per cent of non-industrial power, private firms are the backbone of power production and are in a more commanding position in this segment of the industry than in any other. All other classes, but primarily the cooperatives, purchase much of their power requirements from the private companies. From Table 6 one can see that the cooperatives sell approximately 40 per cent more electricity than they produce. This deficit is covered principally by purchases from the private firms, supplemented by purchases from the municipal and federal systems. The municipalities as a group have to purchase a comparatively small amount of energy to cover their sales. However, it is important to know that certain municipalities produce no power at all and must purchase all the power they sell. Some municipal systems buy power to supplement their own production; others generate a considerable volume of power in excess of their needs and, therefore, are free to sell the excess, principally to the cooperatives.

It is also important to note the considerable difference between the volume of utility energy produced (Table 6) and the volume sold to final users (Table 4). During 1958 such final sales accounted for only 73 per cent of total production, leaving nearly 30 per cent of the production not reported as sold within the State. Intra-company uses and transmission and distribution losses may account for 10 to 15 per cent of production; even then, New Mexico companies are producing 15 to 20 per cent more than they sell within the

State. But that 15 or 20 per cent is not really an "excess." The principal factor in this situation is the volume of power generated here but exported to surrounding states. Only those producers with important outside markets do any outside selling.

It is the capacity of the electric utility, the capacity of its generating plants, that makes a specific volume of energy production possible. No generating plant--no production. The volume of power from the generating plant is limited by the capacity of its generators; for example, a plant with a capacity of 10,000 kilowatts can produce 10,000 kilowatts an hour, but no more. Except for maintenance and repair stoppages these 10,000 kilowatts can be produced continuously. However, the demand for electric energy fluctuates throughout the day and throughout the year. It is obvious that the demand for electric energy is relatively small during the early hours of the day, but increases to a peak during the evening hours. During the year as the days grow shorter, or the sky becomes overcast, the volume of electricity demanded increases. Additionally, as the community grows, as the level of business rises, and as the utilization of electricity becomes more intensive, the demand for electric power builds up. As this happens, the planning and construction of new capacity becomes a major problem for the utility--a problem that is essentially one of timing. The new facility must be available when demand has grown large enough to require the additional power. If construction of new facilities is completed much in advance of need, the new generators will lie idle. If the plant is not completed until some time after the need has developed, some users of electric power may have their supplies curtailed. The construction of generation units may take more than two years; planning, engineering, and financial problems may take another year or even longer. The electric utilities must estimate their needs at least three years in advance: capacity must be available to supply energy when it is required.

TABLE 6

SELECTED STATISTICS, ELECTRIC UTILITIES, BY OWNERSHIP TYPES
New Mexico, 1958

	Private	Cooperative	Public		Total
			Municipal	Federal	
Production (000s kwh)	2,244.4	238.0	132.0	223.0	2,837.4
Per Cent of Total	79.1	8.4	4.6	7.9	100.0
Sales (in millions kwh)*	1,770.8	332.8**	137.2	18.0	2,258.8
Per Cent of Total	78.4	14.7	6.1	0.8	100.0
Revenues (000s)	$ 32,587.2	9,380.0**	4,420.8	285.4	46,673.4
Per Cent of Total	69.8	20.1	9.5	0.6	100.0
Number of Customers	174,546	52,040**	25,079	3,827	255,492
Per Cent of Total	68.3	20.4	9.8	1.5	100.0
Net Plant Investment (000s)	$117,975.7	47,711**	na	na	--

*Includes sales to other electric utilities and is, therefore, not comparable to Table 4
**Estimated
na - not available
Sources: Federal Power Commission
Rural Electrification Administration
Individual municipal electric utilities
Atomic Energy Commission
Bureau of Reclamation

Growth in Generating Capacity, 1945-1958

Table 7 traces the development of electric generating capacity in this state during the last 13 years. Combining the records of industrial and utilities groups shows that a fourfold increase has occurred since the end of the war. Although we know that industrial uses expanded considerably, industrial generating capacity grew only a modest 32 per cent. The answer is that industrial firms have been buying a larger and larger portion of their electric energy from utilities, thus sparking additional increase in the generating capacity of the utilities.

Between 1945 and 1958 the four classes of utilities more than quadrupled their capacity (377 per cent). Just since 1955 has come a 64-per

TABLE 7

INSTALLED ELECTRIC GENERATING CAPACITY*
New Mexico, 1945 - 1958
(000s kwh)

Years	Total Capacity	Industrial Capacity	Utility Capacity			Government	
			Total	Private	Cooperative	Municipal	Federal
1945	214	47	167	126	1	12	28
1950	342	54	288	226	11	20	31
1952	428	55	373	279	20	23	51
1954	537	45	492	363	47	31	51
1955	532	45	487	361	43	32	51
1956	542	61	481	352	45	33	51
1957	714	62	652	504	53	44	51
1958	858	62	796	598	70	76	51
Per Cent Change							
1955-1958	61.3	37.8	63.4	65.6	62.8	137.5	0.0
1950-1958	150.9	14.8	176.4	164.6	536.4	280.0	64.5
1945-1958	300.9	31.9	376.7	374.6	7,000.0	533.3	82.1

*Because of rounding, individual items may not add to total
Source: Bureau of Business Research, based upon reports of the Federal Power Commission

cent increase, representing steady expansion. In terms of percentages the electric cooperatives had the greatest growth; but when the level of activity is as low as it was during the early years of cooperative activity, per cent increases reach fantastic proportions and tend to give a somewhat distorted picture of the situation. However, cooperative generating capacity began its period of most rapid growth in 1945 and since 1950 has led the field. The rate of such expansion has slowed down noticeably in the last three years, although a kilowatt increase has continued.

The private utilities upped their generating capacity 375 per cent in this 1945-1958 period. The gain is more impressive when stated in actual increase in kilowatt capacity--472,000 kilowatts, 75 per cent of all capacity installed by all utilities since 1945. At the same time, the cooperatives had a 7,000-per cent increase, but this meant an addition of only 69,000 kilowatts.

Municipal systems had about six times more generating capacity in 1958 than they had in 1945--an increase of 64,000 kilowatts. In the last three years, 1955 to 1958, this municipal capacity grew the fastest of the four classes, primarily during 1958, when it jumped 73 per cent from the previous year.

Federal capacity, represented by the Elephant Butte project and Atomic Energy Commission facilities at Los Alamos, has not changed since 1952. Elephant Butte facilities have remained unchanged since the project was completed in 1941, but Los Alamos had periodic additions up to 1952.

Production Growth Since 1945

Table 8 traces the growth of electric power production in New Mexico since 1945. Although the industry expanded a whopping 407 per cent in this 13-year period, three of the four ownership classes expanded even more rapidly. In the post-war period New Mexico's electrical cooperatives grew at a phenomenal rate, with their growth demonstrated by a 1,090-per cent increase in power production. These cooperatives did not really get under way for several years after the close of the war, but since 1950 their production increase genuinely merits the word phenomenal.

Municipal power production has been no laggard. Since 1945 it has increased 500 per cent, but since 1950 its rate of growth has not come close to that of the cooperatives.

While the expectation is that extremely rapid expansion is not particularly characteristic of business organizations already large in size, this is not particularly true in the case of New Mexico's private electric utilities. During the 1945-1958 period these companies increased their production by 437 per cent; during the last three years they pushed it up almost 50 per cent. The same period saw federal production expand only modestly. At the end of 1955 it actually was smaller in volume than at the beginning of the period; however, a sizeable increase during 1958 brought the gain for the whole period up to 91 per cent.

Individual Utilities

PRIVATE UTILITIES

So far, this discussion has been broad in outline; but to most individuals the activities of a particular utility, the one serving them, are most

interesting. This section, therefore, sets forth the salient facts regarding individual utilities in this state. Tables 9 through 15 contain current operating statistics for individual electric utility firms and agencies.

There are seven private utilities, all but two of which have their own generating facilities. For convenience, we will refer to these five as "major utilities" and to the others as "minor utilities."

Obviously, generating facilities in this state are heavily concentrated in the hands of the five private utilities, which with 14 plants control 70 per cent of total capacity. The approximate similarity of the generating capacity of the cooperative, municipal, federal, and industrial plants is interesting to note.

Eighty-nine per cent of the generating capacity in New Mexico is produced at steam plants, about 8 per cent at internal combustion plants, and 3 per cent at hydroelectric installations. Steam plants, of course, use steam to drive an electricity-producing generator; at the internal combustion plants, internal combustion engines, similar to automobile engines, are connected to the generator; in hydroelectric plants water power is utilized to drive the generators.

Natural gas is the fuel primarily used to produce electric power in New Mexico. Excluding water power, natural gas accounted for over 97 per cent of all fuels used (on the basis of BTUs) during 1958; coal provided 2.5 per cent; and petroleum, 0.5 per cent. Natural gas has grown considerably in importance as the electricity-producing fuel in New Mexico. During 1945 natural gas accounted for only 75 per cent of all fuels used. Coal accounted for 16 per cent; and petroleum, for 7 per cent.

Although the Public Service Company of New Mexico is not actually the biggest electric firm in the State, it has the largest investment in facilities within the State--valued at $59 million at the end of 1958--about $12 million more than any plant of its closest rival. It had the largest number of customers (51 per cent of the total) in 1958, but came second in terms of the total number of kilowatts sold. Nevertheless, though it sold 100 million kilowatts less than did Southwestern Public Service, the New Mexico Public Service took in $3.5 million more in revenue. The explanation of this strange situation is that Southwestern sells a considerable volume of electricity to other utilities, primarily cooperatives (see Table 11), while New Mexico Public Service sells a larger volume (at higher rates) to residential consumers. This company operates four New Mexico power plants, one of which is the State's second largest. However, these facilities are the largest available to serve New Mexico customers exclusively, while the bulk of the facilities of the El Paso Electric Company (which has the largest generating unit in the State) is directed toward a Texas market.

Expansion of this firm's generating facilities has been extremely rapid, growing from a 1948 total of 51,000 kilowatts to a 1958 total of 200,000 kilowatts; and a second 49,000-kilowatt unit is currently being added to the Reeves station, newest in the State. This firm probably will soon have the largest generating capacity in New Mexico.

Southwestern Public Service Company is the largest electric utility operating in New Mexico and has more than $227 million invested in plant

TABLE 8

ELECTRIC UTILITY POWER PRODUCTION
BY OWNERSHIP TYPES
New Mexico 1945 - 1958
(in millions kwh)

Years	Total Utility Power Production	Private Utilities	Cooperatives	Government Utilities: Municipal	Government Utilities: Federal
1945	559	418	2	22	117
1950	1,061	886	27	45	103
1952	1,431	1,197	70	63	101
1954	1,707	1,434	90	83	101
1955	1,866	1,519	146	87	114
1956	2,158	1,736	195	103	124
1957	2,438	1,959	208	123	148
1958	2,837	2,244	238	132	223
Per Cent Change					
1945-1958	407.5	436.8	1,090.0	500.0	90.6
1955-1958	52.0	47.7	163.0	51.7	95.6

Source: Bureau of Business Research, based upon reports of the Federal Power Commission

TABLE 9

OPERATING STATISTICS, PRIVATE ELECTRIC UTILITIES
New Mexico, 1958

Utilities	Total Customers	Electric Energy Sold (000s kwh)	Revenues from Sales (000s)
Public Service Co. of New Mexico	88,265	629,250.9	$13,736.4
Southwestern Public Service Co.	41,787	726,213.6	10,211.3
El Paso Electric Co.	13,720	174,888.2	2,841.6
Community Public Service Co.	15,409	80,325.4	2,422.5
New Mexico Electric Service Co.	11,317	144,925.1	2,783.1
Basin Light & Power Co.	3,393	14,001.9	530.5
Pecos Light & Power Co.	610	1,086.7	56.8
Ray Edington	45	62.0	5.0
TOTAL	174,546	1,770,753.9	$32,587.2

Source: New Mexico Public Service Commission

and equipment. However, this firm operates primarily in Texas, with its main office at Amarillo, doing only about 23 per cent of its business in New Mexico. Its Cunningham plant is among the newest in the State, having been formally dedicated in October 1957. It not only provides energy for the company's retail customers, but also generates energy for wholesaling. Additional capacity is currently being added to this plant. Southwestern is not a member of the New Mexico Power Pool, but is interconnected with electric systems in Texas.

El Paso Electric Company has at its Rio Grande power plant the largest generating unit in the State, accounting for over 25 per cent of our total generating capacity. At the end of 1958 El Paso had about $65 million invested in facilities, only about 21 per cent of which are located inside New Mexico. A member of the New Mexico Power Pool, El Paso sells approximately 10 per cent of all its energy inside the State, providing an important volume of energy to federal installations in southern New Mexico. The principal market for this company is the El Paso, Texas, area.

Community Public Service Company, of Fort Worth--like El Paso Electric and Southwestern--is a utility with part of its facilities located outside our state. About 22 per cent of Community's total plant--four small units--is in New Mexico and provides service to two separate areas, the Silver City-Lordsburg area and the Alamogordo-Tularosa-Ruidoso region.

The New Mexico Electric Service Company supplies Hobbs, principally, but also sells power in southeastern Lea county at Eunice, Jal, and surrounding territories. The generating facilities at Hobbs are the smallest of all utility plants. Their maximum productivity cannot nearly fill the company's requirements; therefore, additional power is purchased from Southwestern Public Service Company, power presumably generated at Southwestern's Cunningham plant.

Though it was not strictly a municipal utility, the Basin Light and Power Company was owned by the City of Farmington and was originally employed to operate electric facilities in San Juan county beyond the five-mile limit to which the municipal system was restricted. The 1959 Legislature removed this limit, however, permitting Farmington to merge Basin Light and Power into its own system. The resulting city utility is now able to operate throughout the county, producing the only power available for sale there (see Municipal Operations below).

The Pecos Light and Power Company and Ray Edington, a single-proprietor utility, provide electric service in very small areas--the Pecos firm, in the area immediately adjacent to the Town of Pecos; the Edington firm, in and near the Town of Rodeo. Neither of these firms has generating facilities, but purchases power from other utilities, with Pecos Power buying from New Mexico Public Service and Edington buying from the Columbus Cooperative.

COOPERATIVES

Tables 10 and 11 present operating statistics for the electric cooperatives selling power at retail. Only two of our 17 co-ops have generating facilities--the Plains Co-op, only a producer-wholesaler and, therefore, not included in the table, and the Lea Cooperative, a producer-retailer.

The Plains Cooperative was originally organized to build a generating plant in the Clovis area, but was later switched to the Rio Grande Valley, when a tight power situation on the eastern side of the State was solved. Its first full year of operation was 1955, during which it generated 106 million kilowatts of energy. Approximately 145 million kilowatts were generated during 1958. Energy from this plant is sold in an area ranging from the Colorado border to within 30 miles of the Texas border. A third unit, increasing capacity by a third, was installed during

TABLE 10

OPERATING STATISTICS OF ELECTRIC COOPERATIVES*
New Mexico, 1957

Cooperatives	Total Customers	Electric Energy Sold (000s kwh)	Revenue from Sales (000s)
Lea County	6,246	51,821	$1,292.2
Jemez Mountains	5,924	14,599	655.2
Kit Carson	4,955	8,936	439.1
Farmers'	4,692	16,952	538.9
Continental Divide	4,028	51,749	1,316.0
Central Valley	3,416	61,617	1,036.8
Socorro	3,299	18,320	580.9
Otero County	3,173	12,107	437.7
Central New Mexico	3,055	12,307	466.4
Roosevelt County	2,756	19,465	481.8
Springer	2,204	9,669	352.4
Mora-San Miguel	1,975	2,436	161.5
Northern Rio Arriba	1,152	4,010	174.1
Columbus	901	13,563	357.9
Southwestern	860	3,531	166.2
Sierra	458	1,386	70.1
TOTAL	49,094	302,468	$8,527.2

*Does not include the Navapache Cooperative that provides service in parts of Catron County but that operates principally in Arizona, also omitted is the Plains Cooperative, which does not sell to ultimate consumers.

Source: Rural Electrification Administration

New Mexico Cooperatives

Central Valley Electric Cooperative, Inc., Artesia

Roosevelt County Electric Cooperative, Inc., Portales

Farmers' Electric Cooperative, Inc., Clovis

Kit Carson Electric Cooperative, Inc., Taos

Otero County Electric Cooperative, Inc., Cloudcroft

Mora-San Miguel Electric Cooperative, Inc., Mora

Northern Rio Arriba Electric Cooperative, Inc., Chama

Sierra Electric Cooperative, Inc., Truth or Consequences

Plains Electric Generation & Transmission Cooperative, Inc., Albuquerque

Springer Electric Cooperative, Inc., Springer

Socorro Electric Cooperative, Inc., Socorro

Central New Mexico Electric Cooperative, Inc., Mountainair

Continental Divide Electric Cooperative, Inc., Grants

Lea County Electric Cooperative, Inc., Lovington

Columbus Electric Cooperative, Inc., Deming

Southwestern Electric Cooperative, Inc., Clayton

Jemez Mountains Electric Cooperative, Inc., Espanola

MUNICIPAL OPERATIONS

Details on the operations of municipal electric systems are included in Table 12. Such systems are of two basic types: systems that both produce and distribute electric energy and those that only distribute electricity purchased from others. Five municipal systems generate power (9 per cent of the State's total), while the Carrizozo, Springer, and Truth or Consequences systems purchase all the power which they distribute. With the exception of the Farmington plant, municipal generating facilities are small. (When current expansion of the Farmington utility is completed, that system will have a capacity of almost 40,000 kilowatts.)

The position of the electric utility within a city government varies with different localities. In some communities the municipally owned electric system is operated like any other department of city government. The city manager, or a similar official, is primarily responsible for its operation, and the city council sets its policies. Income and expense items go through normal city channels. In other communities the utility system may be completely divorced from "regular" city operations. A semi-independent board of directors is appointed to determine the policies for the utility and to hire a manager, who in turn responsible to the board for all operations,

1958. In addition to generating power, Plains buys from other electric utilities in order to meet the requirements of the retailing cooperatives it serves. Facilities of the Lea County Co-op are too small to satisfy its own needs. It is currently planning to install a new 16,000-kilowatt generator. The present Lea plant, operating with an internal combustion engine, won the 1957 national award as the most efficiently operated plant of its type in the entire cooperative system.

The major portion of the power sold by our retailing cooperatives comes from the Plains Co-op, although some purchases are made from other utilities (Table 11). Cooperatives in the northern and central areas of the State are served over transmission lines owned by Plains, while those in the south-central area are served over lines of the Bureau of Reclamation. Westside co-ops purchase power from Southwestern Public Service, while two distributors--one near Gallup and one near Clayton--buy from municipal systems. Adding up all power purchases listed in Table 11 to get the total volume of energy purchased would involve some double-counting, because the power purchased by Plains was in turn purchased from Plains by the retailing co-ops. An important addition to cooperative transmission facilities is the new power line presently under construction from Grants to Gallup.

TABLE 11

ELECTRIC PURCHASES BY COOPERATIVES
New Mexico, 1957

Purchaser	Volume (000s kwh)	Seller
Central Valley	71,238	
Farmers'	18,270	
Lea County	692	
Roosevelt	24,228	
Total	114,428	Southwestern Public Service Co.
Central New Mexico	14,733	
Columbus	17,241	
Continental Divide	47,390	
Jemez Mountains	16,923	
Kit Carson	11,064	
Mora-San Miguel	3,135	
Northern Rio Arriba	4,696	
Otero	14,712	
Sierra	1,662	
Socorro	20,474	
Springer	11,267	
Total	163,297	Plains Electric Generating & Transmission Coöp.
Continental Divide	6,442	Town of Gallup, Electric Utility
Southwestern	4,570	Town of Clayton, Electric Utility
Springer	284	San Isabel Coöp., (Colo.)
Plains	6,343	El Paso Electric Co.
	6,180	Public Service Co. of N. M.
	7,566	U. S. Bureau of Reclamation
Total	20,089	

Source: Rural Electrification Administration

using the utility's own facilities and personnel for all its activities. This independence of program is carried even to the point of billing the city government for electricity used, and of requiring payment. Sometimes hot arguments arise between a city and its utility as to the rate the city is to pay for electric service. The municipal utility (usually) donates to the city its surplus income after all expenses have been covered.

Several municipal systems were established when local governments took over the operation of subsidiaries of holding companies. Others were established when citizens and officials saw the possibilities of receiving from them considerable revenue for regular city operations.

FEDERAL OPERATIONS

The two federal utilities in New Mexico are the Elephant Butte project and that operated by the AEC at Los Alamos. Together, they account for 6 per cent of our state-wide generating capacity. The first was established as one phase of a project to develop the potential and tame the the floods of the Rio Grande. The Los Alamos facility was developed during World War II, when the work carried on at this location was a top military secret. Generating facilities were established there, presumably to reduce the possibilities of outsiders' learning the nature of the Los Alamos activity and to maintain the self sufficiency of the community in any emergency.

Table 13 traces the history of electric power generation at both federal plants. The fluctuations at Elephant Butte are noticeably great, but they coincide with variations in the volume of water in the Rio Grande. A heavy flow occurred in the Rio during 1958, and--as a result--the volume of energy generated during the year was the third largest on record. Elephant Butte power is wholesaled to various private, cooperative, and municipal utilities, and to federal government installations in the area. The transmission lines from Elephant Butte are used extensively by other utility systems to carry power from one unit to another among their systems. These lines are constantly used by members of the New Mexico Power Pool.

The principal retail customers of the Los Alamos system are the residential and commercial users in that city. Actually, a small portion of the power produced there is used domestically. The bulk goes directly into various government projects. During 1958 a transmission line was built by the Public Service Company from Albuquerque, connecting with the Los Alamos system, to assure dependable power for the area.

It is doubtful that the capacity of these federal installations will ever be expanded. The total present capacity at Elephant Butte cannot be completely utilized because water power is lacking. Presumably, any additional power needs at Los Alamos will be supplied by the Public Service Company. Although we were unable to obtain detailed information, the federal government is known to be operating at least two other generating plants in New Mexico, both in the Shiprock area. One is at the Bureau of Mines helium plant, and the other is at the Indian School, which is operated by the Bureau of Indian Affairs.

TABLE 12

OPERATING STATISTICS OF MUNICIPAL ELECTRIC UTILITIES
New Mexico, 1958

Municipal Utilities	Total Customers	Electric Energy Sold (000s kwh)	Revenue from Sales (000s)
Farmington	11,042	53,381.8	$2,144.0
Gallup	3,874	40,563.0	875.9
Raton	3,046	14,865.0	408.8
Tucumcari	2,781	12,880.9	412.9
T. or C.	1,854	8,642.4	243.9
Clayton	1,282	3,245.1	134.9
Carrizozo	600	1,817.5	100.2
Springer	600	1,800.0	100.2
TOTAL	25,079	137,195.7	$4,420.8

Source: Reports from individual communities

TABLE 13

GENERATION AT ELEPHANT BUTTE AND LOS ALAMOS
(000s kwh)

Years	Elephant Butte	Los Alamos
1940	2,613	--
1942	136,177	--
1944	121,494	--
1946	99,488	20,107
1948	79,693	--
1950	58,508	46,743
1952	33,623	81,299
1954	10,792	97,795
1955	11,297	101,145
1956	14,137	108,699
1957	30,807	116,052
1958	111,940	111,130

Sources: Bureau of Reclamation and Atomic Energy Commission

INDUSTRIAL OPERATIONS

Table 15-C contains a list, supplied by the Federal Power Commission, of industrial generating plants in New Mexico, some of which have greater generating capacity than do some utility systems. Kennecott Copper Corporation clearly has the largest of these industrial plants. Energy from Kennecott's Chino installation is used throughout the company's operations in southwestern New Mexico.

Details are not available, but it is our understanding that industrial generating capacity in addition to that itemized in Table 15-C exists in New Mexico. These plants seem to be principally at the uranium mills in the Grants and Shiprock areas, and at various oil and natural gas processing centers.

RATES

Table 16 presents residential electric bills for various amounts of power purchased from electric utilities in New Mexico. Bills of five major private utilities and a similar number of municipal and cooperative systems are shown. The municipal and cooperative systems chosen are felt to be representative of their groups, rather than being extremes.

As a group the private utilities tend to have lower rates than either the municipal or the cooperative systems, although close inspection of Table 16 will show that certain municipalities and cooperatives have lower rates than some of the private utilities. Primarily responsible for this difference is the fact that the private utilities operate chiefly in areas where the costs of providing power are lower than in the areas dominated by the other two groups. Both the municipal and the cooperative systems primarily operate on a small scale that does not accommodate large-scale economies. Certain municipal systems are operated with antiquated, inefficient equipment. In addition, particular municipalities maintain higher rate schedules than necessary, so that their electric plants can produce a surplus for the financing of other government programs.

Table 16 presents only residential electric costs. It should not be assumed that the commercial and industrial rates of the various utilities bear the same relationships to each other as do their residential rates. Calculating such industrial and commercial rates, when large volumes of electric energy are purchased, is an exceedingly complex procedure. Such factors as total kilowatts and total kilowatt hours demanded, peak loads by time of day and season of the year, continuity of service, location of the point at which power is purchased, etc., must all be evaluated. Although the factors considered are approximately the same whenever industrial-commercial rates are established, the weight given to the various factors will vary with circumstances. The rate schedule is developed by examination of all pertinent factors and then by relating them to certain utility operating figures. It is then incorporated in a special contract between the utility and the industrial-commercial customer. All rates of utilities regulated by the State Public Service Commission must be approved by the Commission before they become effective.

UTILITY REGULATION

Electric utilities are usually granted a franchise to provide electric service in a particular area. This franchise, in effect, gives the holder a monopoly within the area. To protect the public interest and to prevent utilities from taking unfair advantage because of their positions, regulatory commissions have been established. In New Mexico the State Public Service Commission,

TABLE 14

GENERATING FACILITIES OF THE ELECTRIC INDUSTRY
New Mexico, 1958*

	Private	Cooperative	Municipal	Federal	Industrial	Total
Number of Firms or Agencies with Plant	5	2	5	2	9	23
Number of Plants**	14	2	7	2	13	38
Type of Plant**						
Steam	10	1	3	1	5	20
Internal Combustion	4	1	4	--	8	17
Hydroelectric	--	--	--	1	--	1
Plant Capacity (kw)	598,307	69,530	76,191	51,350	62,202	857,580
Per Cent of Total	69.8	8.1	8.9	6.0	7.2	100.0
Capacity by Type of Plant						
Steam	589,886	49,500	52,100	27,050	41,600	760,136
Internal Combustion	8,421	20,030	24,091	--	20,602	73,144
Hydroelectric	--	--	--	24,300	--	24,300

*Includes projects that were started, but not necessarily completed, during 1958
**In regard to primary energy sources each plant is counted only once.
Source: Bureau of Business Research based upon reports of:
Federal Power Commission
Rural Electrification Administration
Individual municipal electric utilities
Bureau of Reclamation
Atomic Energy Commission

TABLE 15-A

PRIVATELY OWNED GENERATING PLANTS
New Mexico, 1958

Company and Plant	Type of Plant	Plant Capacity	Total Company Capacity
Public Service Co. of N. M.			
Prager	S	35,000	
Person	S	103,000	
Santa Fe	S	12,000	
Reeves	S	50,000	200,000
El Paso Electric Co.			
Rio Grande	S	229,360	229,360
Southwestern Public Service Co.			
Carlsbad	I.C.	2,526	
Carlsbad	S	41,000	
Roswell	S	26,500	
Clovis	S	8,000	
Cunningham	S	66,000	144,026
Community Public Service Co.			
Lordsburg	S	16,500	
Silver City	I.C.	2,700	
Alamogordo	I.C.	2,246	
Ruidoso	I.C.	790	22,236
New Mexico Electric Service Co.			
Hobbs	I.C.	2,685	2,685
Total Private Capacity			598,307

S - Steam
I.C. - Internal Combustion
Source: See Table 14

established in 1941, regulates and supervises the operations of water, gas, and electric utilities. The Commission operates primarily in the area of the private utility, where it regulates rates, specifies quality of service, and approves or disapproves certain types of financial transactions. The Commission also determines what constitutes a reasonable rate of return on investment for the utilities under its authority and allows them to set rates aimed at bringing in the necessary income.

In the bill passed by the 1959 Legislature removing the five-mile limit on municipal utility operation, a section was adopted giving the Commission regulatory power over operations of the utilities outside the five-mile limit. However, state law allows these systems to place themselves completely under the supervision of the Commission, if they want. This provision is clearly set forth in the state statute, but at this time no municipal system has chosen to avail itself of this right.

Neither does the Commission have any authority whatsoever over cooperatives or federal utilities. Since the cooperatives are actually owned and controlled by the people who buy electricity from them, it is felt that these people are able to protect their own interests. Cooperative members have the power to vote out of office a board of directors and a management that have initiated a rate structure or followed other policies considered undesirable by a majority of these members.

Conclusion

Continued growth of the electric utility industry of New Mexico is assured for many future years. However, we hesitate to predict a wide expansion for the industrial segment of the industry, for we feel industrial concerns will buy an increasing proportion of their power from the utilities rather than expand their own generating capacity.

Over a third of all electric energy sold in New Mexico is used for residential purposes. Although we may argue about the exact magnitude of the increase in the State's population by any one time, all reliable observers believe that it will continue to grow. The new population will, of course, demand additional electric service. And in the future as in the past new electric devices will also demand larger and larger volumes of electricity. Electricity will become more and more the servant in the home. Commercial and general business users of electricity will grow, as new business establishments are created and old ones are expanded to provide goods and services for the increased population.

TABLE 15-B

COOPERATIVE AND GOVERNMENT-OWNED GENERATING PLANTS
New Mexico, 1958

	Type of Plant	Plant Capacity	System Total
Cooperative and Plant			
Plains Electric G. & T. Coöp., Inc.			
Algodones	S	49,500	49,500
Lea County Electric Coöp., Inc.			
North Lovington	I.C.	20,030	20,030
TOTAL COOPERATIVE CAPACITY			69,530
Municipality and Plant			
Clayton			
Municipal	I.C.	4,100	4,100
Gallup			
Gamerco	S	16,100	16,100
Farmington			
Farmington	I.C.	3,744	
Farmington	S	30,000	
Aztec	I.C.	1,600	
Animas	I.C.	2,962	
Animas	Hydro	200	38,506
Raton			
Municipal	S	6,000	6,000
Tucumcari			
Municipal	I.C.	11,485	11,485
TOTAL MUNICIPAL CAPACITY			76,191
Federal Agency and Plant			
U.S. Bureau of Reclamation			
Elephant Butte	Hydro	24,300	24,300
Atomic Energy Commission			
Los Alamos	S	20,000	
Los Alamos	I.C.	7,050	27,050
TOTAL FEDERAL CAPACITY			51,350

S - Steam
I.C. - Internal Combustion
Hydro - Hydroelectric

TABLE 15-C

INDUSTRIAL ELECTRIC GENERATING PLANTS
New Mexico, 1958

Company and Location	Type	Capacity
Kennecott Copper Corp.		
Chino	S	29,500
Potash Co. of America		
Carlsbad	I.C.	9,292
El Paso Natural Gas Co.		
Jal	S	500
Jal	I.C.	4,100
Blanco	S	3,000
U.S. Potash Co.		
Carlsbad	S	4,000
Carlsbad	I.C.	305
Warren Petroleum Corp.		
Eunice	S	3,000
Lea County	I.C.	1,235
Skelly Oil Co.		
Eunice	I.C.	2,345
Phillips Petroleum Co.		
Eunice	I.C.	1,250
Hobbs	I.C.	375
Lea County	I.C.	425
Prestige Lumber Co.		
Alamogordo	S	1,600
Atlantic Refining Co.		
Denton Gas	I.C.	1,275
TOTAL INDUSTRIAL CAPACITY		62,202

S - Steam
I.C. - Internal Combustion
Source: See Table 14

Growing requirements of industrial organizations may prove to be among the more dynamic factors in a growing demand for electric energy. Industrial users of electricity will probably rely more heavily than presently upon utility power, because the large integrated utility will be able to deliver energy to the industrial firm as cheaply as, and probably more cheaply than, the company can supply itself, and without operational problems. Industrial progress in New Mexico has been rapid and is likely to be more rapid in the future. As industrial growth accelerates, demands for electric power will also multiply.

In regard to the immediate future of the electric industry, the plans of Utah Construction Company and of Arizona Public Service Company are most interesting. These firms are presently proceeding with plans for a large-scale, strip coal mining operation south of Fruitland on lands owned by the Navajo Tribe. Present discussions contemplate the construction and ownership and operation by Arizona Public Service of a one-million-kilowatt generating plant, using coal as a primary energy source. Utah Construction has already filed an application with the State Engineer so that water for cooling purposes will be available. Informed guesses are that this plant will be built in connection with a manufacturing-processing complex that will utilize the natural resources--gas, oil, coal--of the San Juan Basin.

Plans are being developed by Farmington to build a major power plant that will supply electricity throughout the Four Corners area. Also, within the next few years the Glen Canyon and Flaming Gorge dams and power plants will be completed. Plans call for the construction of transmission lines to bring power from these sites into the Rio Grande Valley.

TABLE 16

SELECTED RESIDENTIAL ELECTRIC BILLS
FOR SPECIFIED AMOUNTS OF POWER
New Mexico, 1958

	Kilowatt Hours				
	25	50	100	150	200
Private Utilities					
Community Public Service Co.	$2.48	$3.85	$5.50	$6.60	$7.70
El Paso Electric Co.	1.12	2.25	3.75	4.75	5.75
New Mexico Electric Service Co.*	1.50	2.75	4.55	6.05	7.20
Public Service Co. of New Mexico	1.12	2.25	3.75	5.00	6.25
Southwestern Public Service Co.	1.65	2.97	4.62	5.88	6.88
Municipal Utilities					
Farmington	1.38	2.75	5.00	6.75	8.50
Gallup	1.75	2.75	4.75	6.00	7.25
Raton	1.65	2.97	4.62	5.72	6.82
Tucumcari	1.75	3.50	5.50	6.50	7.50
Truth or Consequences	1.25	2.35	4.35	5.35	6.35
Cooperative Utilities					
Lea County	1.50	2.75	4.55	6.05	7.20
Socorro	2.00	3.30	5.55	7.05	8.55
Continental Divide	2.32	2.95	4.20	5.45	6.70
Jemez Mountains	2.00	3.65	5.70	7.45	9.20
Farmers'	3.50	3.50	5.75	7.00	8.25

*At Hobbs
Source: Computed from reports of the Federal Power Commission

Primary power from atomic reactors may have an effect upon electric power production that is revolutionary and world wide. If the estimated potential of energy sources like atomic power, solar furnaces, etc., is realized, electric energy can then be utilized much more intensively. New Mexico's utilities have been paying close attention to developments in the atomic field and are planning to take advantage of new technology as soon as proved economically sound. From every standpoint, the future of the electric industry seems bright. It might well be that electric power will be utilized long after other conventional sources of energy have been abandoned.

A SUPPLEMENTARY ANALYSIS OF ELECTRIC UTILITIES IN NEW MEXICO

Elmer G. Schoggen, Jr.

Col. Elmer G. Schoggen, Jr., USAF, was formerly professor of air science and the commanding officer of the AFROTC at the University of New Mexico.

The production and distribution of electric power by utilities in New Mexico increased between 1947 and 1957 from 760,000 kilowatt hours to 2,438,000, a gain of 221 per cent. Obviously, such growth both resulted from and contributed to parallel expansion in other facets of the economy--population, per capita income, employment, and the like. The electric utility industry is, therefore, worthy of examination as to its structure, the character of its demand and supply, its growth trend, and its cyclical performance.

On January 1, 1958, there were 35 companies (agencies) producing and/or distributing electric power to various types of customers throughout New Mexico. Each was classified as a public utility, which--according to the Public Utility Act--is an electric or gas or water or steam facility dedicated to public service. Seven of the 35 were privately owned; 10 were publicly owned, including those owned by agencies of the federal government; 18 were cooperatives.

JURISDICTION

All public utilities, except cooperatives and those owned and run by municipalities and the federal government, operate under the regulation and supervision of the State Public Service Commission; and municipal utilities can be brought within the Commission's jurisdiction, if the respective municipalities so elect, in order to reap all the benefits of the Act. Functions of the Public Service Commission include the adoption, promulgation, and enforcement of rules and regulations; control of the issuances, assumption, or guaranty of securities; approval of acquisitions and consolidations, of applications, of contract rates between municipalities and utilities, of rate changes, and of assessment and collection of fees for inspection and supervision; ascertainment of valuations; establishment of standards of service; requiring just and reasonable rates whether made, demanded, or received by a utility; requiring adequate, efficient, and reasonable service, the filing of classification schedules, and adherence to them; prevention of unreasonable discrimination; issuance of certificates of convenience and necessity; regulation of abandonment of service; handling of complaints; and conduct of formal and informal hearings.

Whether in spite of or aided by such wide supervision, electric utilities in this state have forged ahead in impressive fashion. The index of electric power production, as calculated by the UNM Bureau of Business Research with the 1947-1949 average for a base, increased from 70.8 in 1944 to 246 in 1957, a gain of 248 per cent.

CLIMATE FOR GROWTH

Since generating installations involve relatively large sums of money, require considerable time for construction, and grow out of extensive planning, the continuing expansion of such facilities in this state indicates a confidence on the part of management regarding the future of New Mexico. The programs of the Public Service Company of New Mexico and of the Southwestern Public Service Company may be considered typical of area programs. The first company recently completed an $8-million generating unit north of Albuquerque. At the end of 1957 this company had a generating capability of 158,600 kilowatts, with an additional 100,000 to be provided before 1961. In December 1957 the company was serving approximately 85,000 New Mexico electric customers and 10,000 water customers. Total fixed assets, excluding construction work then in progress, approximated $52 million.

The Southwestern Public Service Company, with an aggregate generating capacity--most of it in Texas--in 1957 of 816,600 kilowatts, produces all its power needs and plans an additional 112,500 kilowatts for 1960. During 1957 the company spent $3 million on electric transmission and distribution facilities and opened its fourth New Mexico generating plant, the Cunningham station, near Hobbs. Other important operations included connecting existing transmission and distribution facilities with that new station. Since all expansion must rest upon estimates of future customer requirements--some of them quite difficult to forecast--continued expansion programs like the two cited here express genuine confidence in New Mexico's economic future.

TYPES OF SALES

Sales of electric power are categorized as residential, rural, commercial, and industrial. The distribution of sales made by the Southwestern Public Service Company is considered representative of most utilities serving all types of consumers. That breakdown, as given in Standard and Poor's (July 24, 1958), was as follows: residential and rural sales, approximately 32 per cent of electric revenues; commercial, 22 per cent; industrial, 32 per cent. Such diversification of customers necessitates consideration of the whole economy when plans for future operations are made.

Commercial and industrial uses are subject to more irregularity in levels of consumption than are residential uses. Commercial and industrial customers are directly concerned with and subject to vacillations in the national economy as they affect electric power needs. Residential and rural consumption, on the other hand, is inherently more stable because of the more permanent aspects associated with it. That stability is self evident. Electric power continues to be a necessity of modern living and, as such, stands high on the customer's priority lists in terms of essential day-to-day requirements.

New Mexico is fortunate in that the federal government, through large installations and investments within the State, provides a stabilizing economic force not enjoyed to the same extent by many other states. Such stability is undoubtedly reflected in the rapid expansion of electric power production here during the last 15 years.

The relative importance of the federal factor referred to above is also reflected in the large percentage of personal income derived from government sources throughout New Mexico. The UNM Bureau of Business Research reported the 1956 percentage to be 26.8. In comparison, other income sources by category and percentages for that year were 6.1 in farm income and 67.1 in private nonfarm income.

Examples of the effect upon electric utilities of such significant government activity can be found in the electric power requirements of installations like Cannon Air Force Base, White Sands Proving Grounds, Holloman Air Force Base, Sandia Army Base, and Kirtland Air Force Base. Each installation is a city in its own right, with commensurate power requirements.

ESTIMATING FUTURE POWER DEMANDS

Electric producers are concerned both with immediate (one-year) and with long-range (three-to-five-year) power requirements. The necessity for accurate planning is directly related to the heavy capital investments which must go into plant machinery and equipment. (In 1957, facilities and plant equipment constituted 90 per cent of the total assets of the Public Service Company of New Mexico.) A factor of equal importance is

TABLE I

OPERATING STATISTICS OF THE PUBLIC SERVICE COMPANY OF NEW MEXICO
1947 - 1957

	1947	1949	1951	1953	1955	1957	Per Cent Change 1947-1957
Customers on December 31	41,151	52,244	62,219	69,871	78,500	85,337	+ 107
SALES (000s kwh)							
Residential	33,505	50,366	74,502	104,912	129,549	170,778	+ 410
Rural	7,543	10,192	13,721	17,540	18,361	18,918	+ 151
Commercial*	80,899	107,898	157,613	182,748	234,797	197,478	+ 252
Industrial*	--	--	--	--	--	87,413	--
Public Authorities	9,160	13,207	20,476	28,954	31,060	38,015	+ 315
Other Electric Utilities	--	1,234	2,418	828	1,669	20,388	+1,552**
Inter-Department Sales	548	313	3,423	1,212	2,834	2,371	+ 333
Total Electric Sales	131,655	183,210	272,153	336,194	418,270	535,361	+ 406

*Commercial and Industrial Sales were combined until the year 1956. From then on, they have been accounted for separately.
**Obtained by comparing 1949-1957
Source: Annual Report for 1957 of the Public Service Company of New Mexico

the long-lead time factor required for getting an expanded capability installed and operating.

As has been said, power requirements of industrial and commercial companies are volatile and difficult to predict, especially in instances of irregular economic activity. Such uncertainty with regard to possible or probable power needs poses a particularly difficult problem for the utility whose rates are established by a state commission (and are, therefore, relatively rigid) and who finds itself faced with declining demand. The margin of profit accordingly narrows at a faster rate than does that of an organization which can adjust sales prices to meet changing market conditions. A similar lag occurs also--but with less serious results--in the case of a strengthening market.

ACTUAL DEMAND

The demand for electric power falls into two broad categories: "derived" (for industrial and commercial uses) and "consumer" (for residential and rural uses). The marketing risk is directly proportional to the degrees of elasticity of these two kinds of demand. As has already been pointed out, residential and rural demand is relatively inelastic, whereas exactly the opposite is true of the other kind of demand. The story of comparative growth in sales categories is a story of a total increase during those years of 229 per cent in sales of electric energy in this state: 168 per cent in commercial, 173 per cent in residential, 198 per cent in industrial, and 1,000 per cent in "other" sales.

An interesting key to the typical relationships existing among the various kinds of demands is found in the 1947-1957 statistics of the Public Service Company of New Mexico which make up Table I. Percentage changes for that period represent increases not to be minimized, since a large majority of those increases occurred in both areas--derived demand and consumer use, thereby indicating broad general growth.

SUPPLY

The supply segment of the electric power industry is made up of a relatively small number of organizations, engaging in marketing and/or production. These organizations are also subject to supervision and regulation by the Public Service Commission. Despite their small number, the companies increased their total average monthly output 30 per cent in just two years, moving up from an average for 1955 of 166,887 kilowatts to one of 217,079 in 1957. Total production--by both utilities and industrial generating plants--within 10 years more than doubled, expanding from 1.1 billion kilowatts in 1949 to an annual rate of about 2.8 billion for 1957. The annual increase during the intervening years was a fairly constant one of about 10 per cent.

Table II presents a comparison of national and state growth in the matters of installed capacity and of production for the period of 1945-1956. The relatively greater growth for New Mexico in comparison with that of the United States as a whole is interesting.

FINANCE

All financial operations of privately owned and operated utilities are closely scrutinized by the New Mexico Public Service Commission. The primary marketing risk facing this industry is identical with that facing heavy industry as a whole--the danger of being confronted with idle capacity. A ceiling on profits of electric producers and distributors is set by the state commission. Therefore, as I see it, management is extremely thoughtful about financial affairs, since there is no inducement to make profits in excess of that ceiling. The principal methods employed to finance expansion programs include the issuance of common stock, the sale of bonds, and the negotiation of bank loans, any one of which means long-term indebtedness. An indication of such a situation is found in the 1957 Balance Sheet of the Public Service Company of New Mexico. A long-term debt of $23.9 million constituted 43 per cent of the total liability of $55.5 million. In contrast, fixed assets totaled $50.6 million and constituted 91 per cent of total assets of $55.5 million.

Utilities have been allowed fast amortization write-off on equipment, a privilege creating a favorable tax condition in view of large depreciation allowances. The result is an understatement of fixed assets and comparable net worth.

EMPLOYMENT

Employees in electric utilities in New Mexico make up one of the highest paid groups among all those reported in covered employment. During

TABLE II

ELECTRIC UTILITIES: GENERATING CAPACITY AND PRODUCTION*
United States and New Mexico, 1945-1956

	Capacity (in thousands kw)		Production (in millions kwh)	
Year	United States	New Mexico	United States	New Mexico
1945	50	167	222	559
1950	69	288	329	1,061
1955	114	487	547	1,866
1956	121	481	601	2,158

*Installed capacity as of December 31; production for years ending December 31

Source: Bureau of the Census, with adjustments by the Bureau of Business Research

TABLE III

UTILITY EMPLOYMENT IN NEW MEXICO
Fourth Quarters 1949 and 1957 and First Quarter 1958

	No. of Units	Workers Oct.	Nov.	Dec.	Qtrly. Average	Av. Wkly. Earnings
First Quarter 1958						
Electric & Gas Utilities	73	4,981	5,025	5,105	5,037	$93.53
Fourth Quarter 1957	75	5,060	5,059	5,034	5,052	97.63
Fourth Quarter 1949	73	2,137	2,155	2,208	2,167	58.80

Source: Employment Security Commission of New Mexico

the first quarter of 1958 their average weekly earnings were $93.53--12th in rank among the earnings of all categories of covered employment. Also significant is the continued rise in the size of the employee force. Between December 1955 and December 1957, electric-utility workers increased from 4,303 to 5,034. This growth is characteristic of a trend in the industry, which has prevailed for the last 15 years.

Table III provides a ready comparison among employment figures for the fourth quarter of 1949, the fourth quarter of 1957, and the first quarter of 1958. Gains for the periods covered are readily apparent both in numbers of employees and in average weekly earnings. Employment is considered stable because of the nature of the business: (1) it is a state-regulated industry; (2) there is a large, inelastic demand; and (3) the product is sold to a large majority of the population, with considerable diversity existing as to types of demand.

SUMMARY

The electric power industry in New Mexico has expanded at an extraordinary rate during the last decade as measured by generating capacity, transmission stations, and consumer usage. That this growth has been closely allied to the overall economic growth occurring throughout the State is demonstrated particularly by the fact that the derived-demand areas of industrial and commercial power usage increased by 198 and 168 per cent, respectively, between 1949 and 1957.

This industry is subject to cyclical variations, as is any heavy industry, and is characterized by demand exceeding supply in periods of prosperity and by idle capacity in periods of business decline.

This industry is faced with the problem of meeting increased customer demands which are exceedingly difficult to forecast. The long-lead time associated with converting capacity plans into available customer delivery, plus heavy fixed costs of plants and equipment, requires the utmost caution, foresight, and skill to achieve prudent planning.

The growth of the industry in this state during the last decade indicates management's awareness of the need to expand facilities regularly.

State regulation of the utilities includes approval of rates and defining and demanding the quality of service to be given. Additionally, such regulation requires the industry to provide service to an expanding market. A reasonable assumption is that demand will continue to exceed supply because of the heavy fixed costs, state regulation, and management's resultant reluctance to be saddled with excess capacity. Such unused capacity could become the focal point for posing the question of reduction of rates. That such has been the case only infrequently--and then exclusively during serious business recessions--does not remove the possibility of its happening at any time.

This industry is considered highly essential to all segments of the State's economy. All studies aimed at eventually attracting new industry to New Mexico contain data on available electric power capacity and on planned expansion of that capacity. Growth in other areas, such as manufacturing and commerce, depends heavily upon the capability of the electric power industry to meet their particular requirements. Any appreciable growth of the commercial and/or industrial segments of the State's economy must to some degree hinge upon and be accompanied by increases in volume of electric power. Both anticipating future needs for such power and building facilities to meet those needs are basic to continued economic growth throughout the entire State.

Monthly Summary (Continued from Page 1)

Except in construction and metals mining, most business activity in the State gained modestly over year-before levels. As measured by employment, mining as a whole was somewhat better than in 1958. Zinc and lead showed some recovery, and potash appeared to have regained full-scale production. Oil and gas both showed production increases, especially gas.

Despite implied promises of the Bureau of Revenue that the breakdown in tabulating and reporting would be remedied, data are still lacking on one of the more critical and sensitive indicators of the course of business activity--sales volume. But we may infer from the decline in bank debits that retail sales volume in August was down slightly from July, but was still well above August 1958.

Based on early figures for September, business activity apparently continued to climb during the third quarter. However, the widening effects of the copper strike showed up in a further rise in unemployment, while spreading effects of the steel stalemate could be anticipated in nonresidential and heavy engineering construction.

Business Activity in New Mexico

	August 1959	Year Earlier August 1958	Per-Cent Change August 1959 from July 1959	Per-Cent Change August 1959 from Aug. 1958	INDEX August 1959 (Average Month 1947-49 = 100)
Index of Business Activity (1947-49 = 100)	281.7	271.9	- 5.4	+ 3.6	281.7
Sales data: Not available. See March issue of NEW MEXICO BUSINESS					
*Life Insurance Sales (1,000s)	$ 20,844	$ 20,225	- 15.5	+ 3.1	594.4
*Bank Debits, 35 banks (1,000s)[c]	478,762	414,051	- 6.3	+ 15.6	300.6[a]
Bank Loans and Discounts, 35 banks (1,000s)[c]	51,154	39,476	+ 3.0	+ 29.6	307.8[a]
Demand Deposits, 35 banks (1,000s)[c]	350,038	317,496	+ 2.5	+ 10.2	189.2[a]
Time Deposits, 35 banks (1,000s)[c]	120,948	108,077	+ 2.1	+ 11.9	346.2[a]
Business Failure Liabilities (1,000s)[b]	-0-	34	-100.0	-100.0	--
Wage Workers in Nonagricultural Establishments	231,500	222,500	- 0.9	+ 4.0	175.7
in Mining	20,000	18,000	- 1.5	+ 11.1	160.4
in Contract Construction	20,300	22,300	- 5.1	- 9.0	160.7
*in Manufacturing	17,100	16,400	- 6.6	+ 4.3	185.2
in Transportation and Utilities	20,800	20,000	0.0	+ 4.0	136.8
in Trade	49,800	47,400	+ 0.8	+ 5.1	171.7
in Finance, Insurance, and Real Estate	8,800	8,300	+ 1.1	+ 6.0	303.4
in Services and Miscellaneous	35,700	33,000	+ 0.6	+ 8.2	164.0
in Government	59,000	57,100	- 0.2	+ 3.3	206.8
Number of Insured Unemployed	3,543	4,375	+ 8.7	- 19.0	--
Rate of Unemployment (per cent of labor force)	1.92	2.47	+ 11.0	- 22.3	123.8
Construction Contracts Awarded (1,000s)	$ 15,789	$ 25,478	- 34.3	- 38.0	--
Residential	10,893	12,465	+ 5.0	- 12.6	--
Nonresidential	2,704	4,727	- 60.1	- 42.8	--
Heavy Engineering	2,192	8,286	- 68.2	- 73.5	--
*Petroleum Production (1,000s of bbls)	8,751	8,445	+ 0.2	+ 3.6	230.7
Natural Gas Production (millions of cu ft)	60,983	53,802	+ 1.3	+ 13.3	379.1
*Electric Power Production (1,000s of kwhs)	304,320	286,641	- 2.4	+ 6.2	344.9
*Index of Total Metallics Production (1947-49 = 100)	20.4	54.3	- 65.6	- 62.4	20.4
Mine Production - Copper (1,000s of lbs)	2,140	9,846	- 79.3	- 78.3	20.2
*Mine Production - Lead (1,000s of lbs)	80	na	--	--	7.7
Mine Production - Zinc (1,000s of lbs)	1,260	na	--	--	19.7
*Mine Production - Potash (1,000s of tons)	1,189	724	+ 40.8	+ 64.3	297.1
Index of All Farm Prices (1947-49 = 100)	102.8	103.8	- 2.6	- 1.0	102.8
Index of Livestock Prices	109.7	111.4	- 3.3	- 1.5	109.7
Index of Crop Prices	92.5	92.1	- 0.9	+ 0.4	92.5
Receipts from All Farm Marketings (1,000s)	$ 7,814	$ 7,280	+ 3.5	+ 7.3	125.1
Livestock and Products	4,194	4,032	- 3.8	+ 4.1	100.0
Crops	3,620	3,248	+ 23.4	+ 11.5	171.3

	September 1959	Year Earlier September 1958	Per-Cent Change September 1959 from Aug. 1959	Per-Cent Change September 1959 from Sept. 1958	INDEX September 1959 (Average Month 1947-49 = 100)
Bank Debits, 35 banks (1,000s)	$505,212	$428,003	+ 5.5	+ 18.0	317.1[a]
Bank Loans and Discounts, 35 banks (1,000s)	46,086	42,347	- 9.9	+ 8.8	277.3[a]
Demand Deposits, 35 banks (1,000s)	335,635	317,687	- 4.1	+ 5.6	181.4[a]
Time Deposits, 35 banks (1,000s)	122,119	110,188	+ 1.0	+ 10.8	349.7[a]
Wage Workers in Nonagricultural Establishments	231,500	224,500	+ 0.1	+ 3.1	175.7
Number of Insured Unemployed	3,619	3,578	+ 2.1	+ 1.1	--
Rate of Unemployment (per cent of labor force)	1.98	2.03	+ 3.1	- 2.5	127.3
*Building Permits, total 17 cities (1,000s)	$ 9,490	$ 9,905	+ 5.5	- 4.2	359.8[a]
Residential	6,336	7,696	+ 13.6	- 17.7	388.2[a]
Nonresidential	2,253	1,509	+ 19.9	+ 49.3	322.3[a]
Other	901	700	- 41.6	+ 28.7	294.0[a]
Index of All Farm Prices (1947-49 = 100)	106.9	108.6	+ 4.0	- 1.6	106.9
Index of Livestock Prices	114.1	116.4	+ 4.0	- 2.0	114.1
Index of Crop Prices	96.8	97.6	+ 4.6	- 0.8	96.8

*Indexes for these items are used to compute the Index of Business Activity.
[a]Although the number of reporting units changes, the indexes for these items are comparable with indexes for preceding months.
[b]The figures in this series are based on the average of three months' data.
[c]Revised
na - not available

Sources:
Retail Sales Data: N. M. Bureau of Revenue
Potash Production: N. M. Bureau of Revenue
Petroleum and Natural Gas Production: N. M. Oil Conservation Commission
Life Insurance Sales (New Ordinary): Life Insurance Agency Management Association
Wage Workers and Unemployment: N. M. Employment Security Commission and U. S. Department of Labor
Electric Power Production: Federal Power Commission
Metallics Production: U. S. Bureau of Mines
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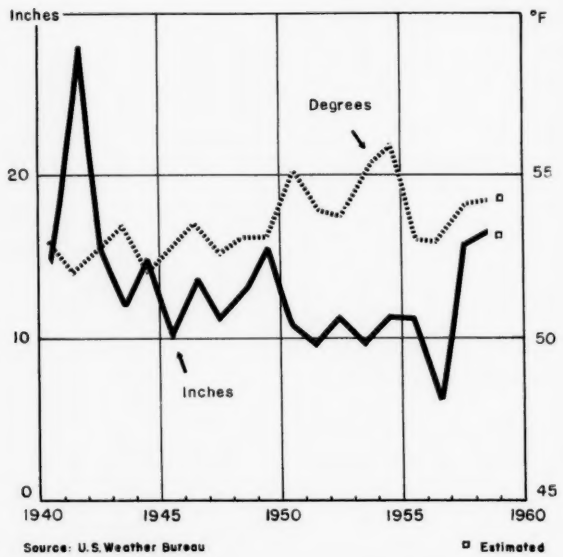
CHART-OF-THE-MONTH

Precipitation and Temperature in NEW MEXICO
are showing a "trend" toward
annual average increases



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